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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

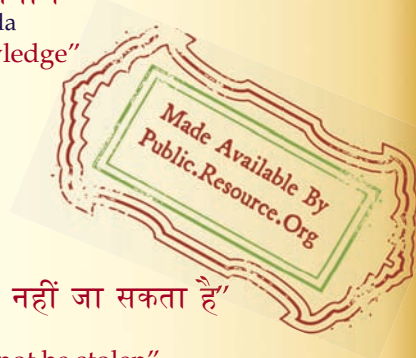
IS 10491 (1983): Muzzle Loading Shot Guns, Single and Double Barrel [PGD 28: Arms and Ammunition for Civilian Use]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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**AMENDMENT NO. 1 DECEMBER 2007
TO
IS 10491 : 1983 SPECIFICATION FOR MUZZLE
LOADING SHOT GUNS, SINGLE AND
DOUBLE BARREL**

(Page 4, Explanatory note, line 6) — Substitute 'Controllerate of Quality Assurance (Small Arms), Ichapur' for 'Controllerate of Inspection (Small Arms), Ichapur'.

(PG 28)

Reprography Unit, BIS, New Delhi, India



Indian Standard

SPECIFICATION FOR MUZZLE LOADING SHOT GUNS, SINGLE AND DOUBLE BARREL

1. Scope — Covers the dimensional, material and testing requirements for muzzle loading shot guns, single and double barrel.

2. Dimensions and Nomenclature

2.1 Dimensions — Shall be as shown in Fig. 1.

- A — Length of breech plug (hut) = 19.05 mm Min.
- B — Bore diameter at 229 mm from breech end = 19.075 mm
18.034 mm
- C — Outside diameter at 76 mm from muzzle end = Actual diameter to be recorded and no machining to be done after proof test.
- L — Barrel lengths = 762, 813, 864, and 914 mm (single barrel)
660, 711, 762, and 813 mm (double barrel)

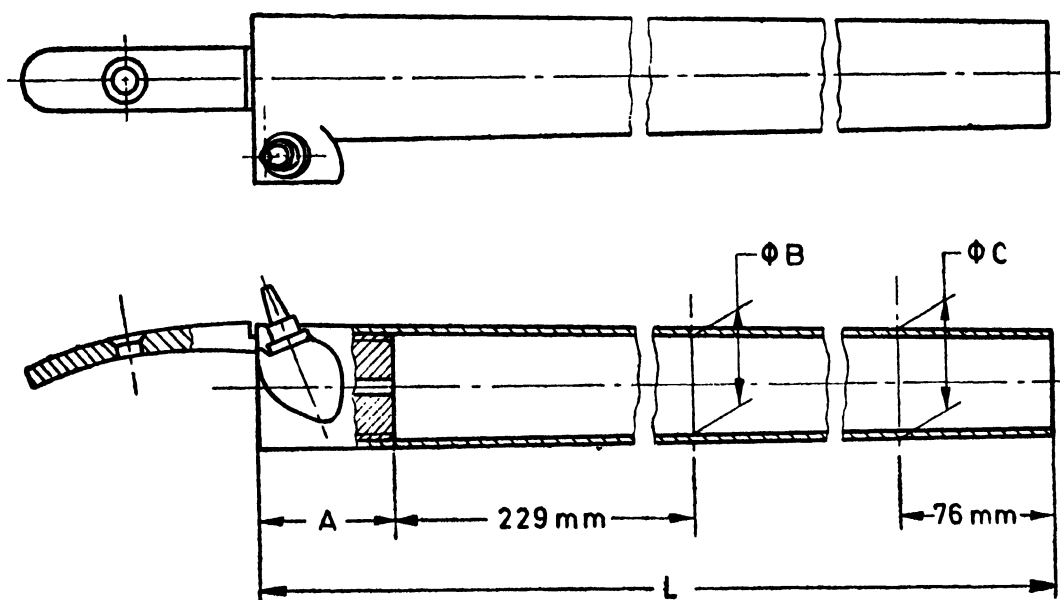


FIG. 1 DIMENSIONS FOR BARREL FOR MUZZLE LOADING SHOT GUN

2.2 Nomenclature — Illustrative sketches of single barrel and double barrel muzzle loading shot guns along with the nomenclature of parts are shown in Fig. 2 and 3 respectively.

3. Material

Barrel

- IS : 5517-1978 'Specification for steel for hardening and tempering' Grade 40Cr4Mo3 or 40C8 or 45C8 or 50C8. If made by forging — IS : 1875-1978 'Specification for carbon steel billets, blooms, slabs and bars for forging', Grade 45C8 or 55C8.

Heat treatment — To be heat treated to achieve mechanical properties given below:

UTS = 700 to 850 MPa
0.2% proof stress — 480 Mpa Min.

Adopted 24 February 1983

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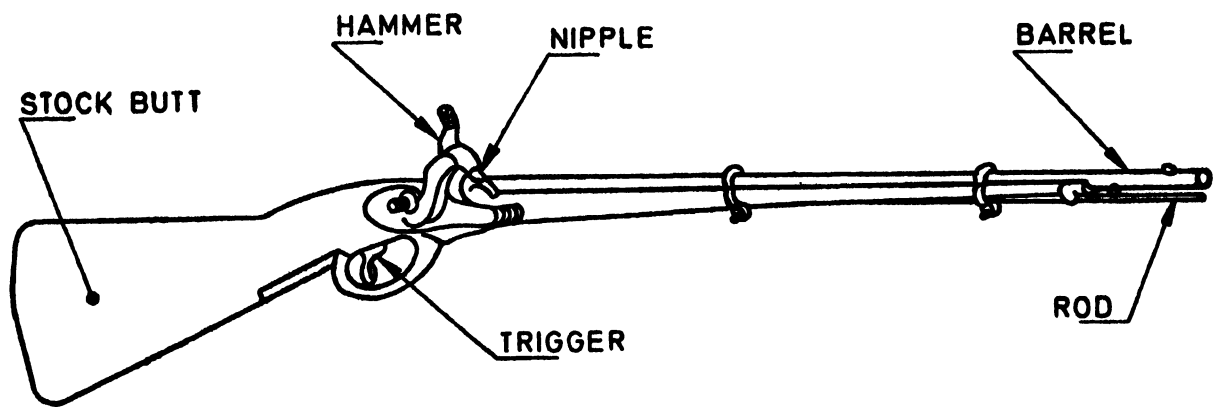


FIG. 2 SINGLE BARREL MUZZLE LOADING SHOT GUN

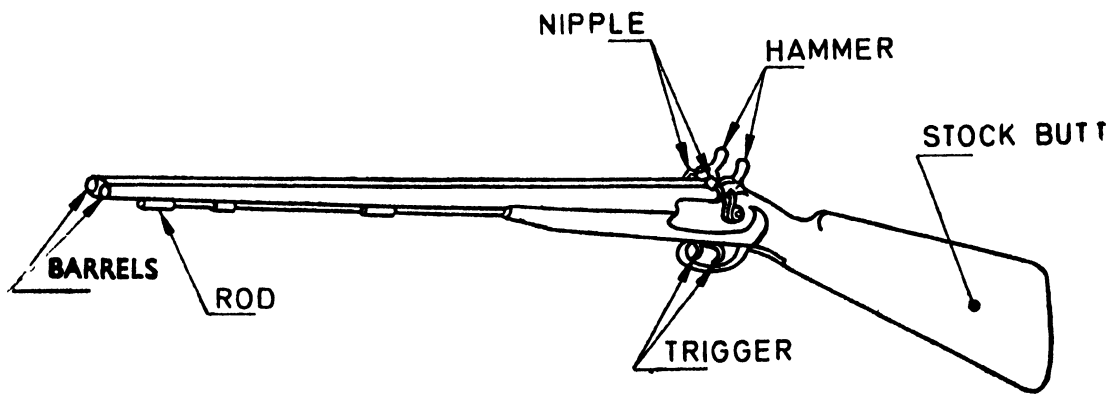


FIG. 3 DOUBLE BARREL MUZZLE LOADING SHOT GUN

Body	— IS : 5517-1978 Grade 55C8 or 40Ni 14 or IS : 3930-1979 ' Specification for flame and induction hardening steels ' Grade 55C6 or 37 Mn6 or 47Mn6.
Trigger	— IS : 5517-1978 Grade 35Mn6Mo3 or 35Mn6Mo4 or 40Cr4Mo3 or 40Cr4. If made by forgings — IS : 4368-1967 ' Specification for alloy steel billets, blooms and slabs for forgings for general engineering purposes ' Grade 40Cr1 or 35Mn2Mo28. Heat treatment — To be heat-treated to achieve mechanical properties given below: UTS=800 MPa Min. 0.2% proof stress=600 MPa Min. Elongation on $5.65/\sqrt{A}$ =16% Min. Izod Impact=55J. Hardness=250 HV generally and 400 HV locally at the catch point.
Sear	— IS : 5517-1978 Grade 31Ni10Cr3Mo6 or IS : 3431-1975 ' Specification for steel for volute, helical and laminated springs for automotive suspension ' Grade 50Cr4V2 or 55Si7 or 60Si7 or 65Si7 or IS : 3885 (Part I)-1977 ' Specification for steel for manufacture of laminated springs (railway rolling stock), Part I, Flat sections (first revision) ' Grade 55Si7. Heat treatment — To be heat-treated to 350-450 HV generally and 600-700 HV locally at catch point.
Hammer	— IS : 5517-1978 Grade 55C8 or 40Cr4 or 37C15. If made by forging — IS : 1875-1978 Grade 55C8 or IS : 4368-1967 Grade 40Cr1 or IS : 2004-1978 ' Specification for carbon steel forgings for general purposes ' Grade 55C8. Heat treatment — To be heat-treated to 350-450 HV generally and 500-550 HV locally at striking face.
Main Spring	— IS : 3431-1975 Grade 55Si7 or 60Si7 or 65Si7 or IS : 3885 (Part I)-1977 Grade 55Si7. Heat treatment — To be heat-treated to 450-550 HV.

- Fastener Fore-end** — IS : 4432-1967 'Specification for case hardening steels' Grade C10 or C14.
Heat treatment — To be heat-treated to 400-500 HV.
- Spring Lever Top** — IS : 3431-1975 Grade 55Si7 or 60Si7 or 65Si7 or IS : 3885 (Part I)-1977 Grade 55Si7.
Heat treatment — To be heat-treated to 500-550 HV.
- Catch Hook** — IS : 5517-1978 Grade 55C8.
Heat treatment — To be heat-treated to 400-450 HV.
- Stock Butt and
Stock Fore-end** — IS : 7549-1975 'Specification for timber half wrought for sporting rifles'.

4. Functional Requirements

- 4.1** While fitting the nipple, care shall be taken so that there is no leakage to affect gas pressure.
- 4.2** For mechanical safety, gun shall be so designed that it shall not fire until and unless it is fully locked.

5. Workmanship and Finish

- 5.1** The guns shall be finished with good surface and smoothness all over preventing sharp corners/edges.
- 5.2** Timber for wooden parts of gun shall be tough, close and straight grained and it shall be properly seasoned. It shall be free from worm or insect holes, knots, warps or other imperfections. It shall be easily machinable and capable of taking high degree of polish.

6. Inspection and Testing

6.1 The following aspects shall be checked:

- a) Condition of the barrel bore to be checked visually. The bore shall be free from any blemishes like cracks, dents, bulge, damage, rust, pitmarks and toolmarks.
- b) In case of double barrel guns, soldering condition of ribs at top and bottom shall be checked for their soundness.
- c) Mass of any gun shall not exceed 3.50 kg.
- d) Trigger pull shall be 25 N to 35 N (in case of double barrel, front trigger for right barrel to be kept 25 N less than rear trigger for left barrel).
- e) Mass of gun 0.19 kg (single barrel)
 0.25 kg (double barrel)
- f) Mass of Barrel 0.90 kg (single barrel, without furniture)
 2.48 kg (double barrel).

6.2 Proof Testing

6.2.1 Proof-testing of each gun is a statutory requirement under the Arms Act 1958 and Arms Rules 1962 and is to be carried out in accordance with the Rules, Regulations and Scales Applicable to the Proof of Sporting Arms in India issued by the Ministry of Defence (see Explanatory Note also).

6.2.2 After proof-testing, final inspection shall be carried out to ascertain any damage, deformation or deviation as a result of proof-firing.

6.2.3 After proof-testing no further machining inside the bore or on outside diameter shall be carried out.

7. Marking

7.1 Identification marks shall be stamped on every gun so as to show distinctly:

- a) The maker's name and registered trade-mark, if any;
- b) The serial number (registered number) of the gun as entered in the maker's register; and
- c) Year of manufacture.

7.2 ISI Certification Marking — Details available with the Indian Standards Institution.

8. Surface Protection — All metal surfaces shall be protected from rust by phosphating followed by appropriate sealing by paint/oil according to IS : 6005-1970 'Code of practice for phosphating of iron and steel' or alternatively all metal surfaces shall be protected by suitable process of blueing/browning to ensure same results as obtained by phosphating according to IS : 6005-1970.

EXPLANATORY NOTE

This standard covers the dimensional, material and testing requirements for muzzle loading shot guns, single and double barrel. Shot guns are required by civilians for games and hunting purposes.

Proof testing of each gun is a statutory requirement under Arms Act 1958 and Arms Rules 1962 and is to be carried out in accordance with the Rules, Regulations and Scales Applicable to the Proof of Sporting Arms in India as amended from time to time and issued by the Ministry of Defence. For this purpose the procedure to be followed for submission of shot guns for proof testing has been laid down by the Controllorate of Inspection (Small Arms), Ichapur and the procedure booklet as well as inspection gauges are available with them. Proof testing and marking is done as per above rules and procedure.

In preparation of this standard, assistance has been derived from the Arms Act 1958 and Arms Rules 1962 of Government of India.